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ABSTRACT

Basic writing teachers can make use of the Learning Cycle teaching technique to design exploration and invention activities with which their students can practice analytical writing. The Learning Cycle approach is based on Piagetian theory and involves a three-phase process of exploration, invention, and discovery. In the exploration phase students receive opportunities for recalling and sharing concrete experiences that are coordinated with learning materials. In the invention phase a new concept is introduced as a way of ordering the experiences, thereby serving to restructure both the experiences and the concepts. Finally, in the discovery phase of the cycle, further activities based on the new concept are planned so that students reinforce and enlarge upon what they learned during the invention phase. (Examples are offered to illustrate how Learning Cycles have been applied to basic writing instruction.) (RL)

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LEARNING CYCLES FOR BASIC WRITERS

Kathy Haney

A few years ago some of my colleagues at the College of Charleston who had attended a workshop on Piaget-based instruction decided to set up a program of studies for freshmen using Piaget techniques and received a grant from the National Science Foundation to help implement the program. Freshmen in the program were to take courses such as introductory level math, sociology, and physics which would satisfy the minimum degree requirements at the College but which would be taught by a team of professors committed to using Piaget-based instruction. I was asked to join the program, even though I had not attended the workshop. During an NEH seminar that summer, I had time to read Piaget and other cognitive psychologists, and I saw opportunities for Piaget-based instruction better suited to a basic writing course than to a regular freshman level composition course. In the end, I did not join my colleagues in the freshman studies program, but I did revise my own basic writing course. The course I now teach is based loosely on Piaget's theory and one of its popular applications in college teaching--the three-phase learning cycle of exploration, invention, and discovery developed by Robert Karplus and others who worked on the Science Curriculum Improvement Study at the University of California, Berkeley. In designing the course I also took ideas from Mina Shaughnessey's Errors and Expectations, James Britton's The Development of Writing Abilities (11-18), and James Moffett's Teaching the Universe of Discourse.

In my course I attempt to address the same problem that the freshman studies program was designed to address, that is, recent studies which indicate that as many as 50% of college freshmen cannot do what Piaget calls formal

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operations. This is especially true of basic writing students, whose most serious problems often do not stem from their inability to edit their writing as much as from their inability to perform the complicated thought processes necessary for analytical writing.

The central element in Piaget's theory is that of mental structures, which are ordered, interrelated systems of knowledge. During the process of intellectual development from infancy to adulthood, these structures are slowly constructed and reconstructed within the brain in four stages of development. Children usually complete the first two stages, sensory-motor and pre-operational, by age seven or eight. It is the next two stages, concrete-operational and formal operational, that I want to focus on briefly. In the ~~pre~~^{concrete}-operational stage a child's thinking is dependent on direct experience and concrete objects. Although the thinking of children in this stage is rooted in the concrete, they make some progress in dealing with the hypothetical, mainly in the form of simple generalizations. Somewhere between ages eleven and sixteen children begin the stage of formal thought. In this stage children can reason about objects that they cannot see or experience directly. Because they can reason from particular to general and back again, they can explore causal relations as they hold in their minds various possibilities and test them. In other words, they can think about their thinking.

According to Piaget, all four stages develop as a result of the child's dynamic interaction with the environment. During this interaction, a child experiences things which do not fit his present mental structure, contradictions which produce a state Piaget called disequilibrium. Through

investigation and guidance from others, the child alters or accommodates his or her inadequate mental structures. Once this is accomplished, the child is then able to assimilate the new situation. This process of assimilation and accommodation working together allows the intellect to adapt to the environment and achieve equilibrium. Two important factors in this development are experience and social interaction. Social interaction is especially important in helping children move away from egocentric frames of reference.

The Learning Cycle developed by Karplus and others at Berkeley is a teaching technique which relies heavily on Piaget's theory. This cycle involves a three-phase process of exploration, invention, and discovery. During the exploration part of the cycle students are encouraged to learn through their experience by means of activities supplied by the instructor. The students' recalling and sharing experiences with others in the class aid in this phase. Then, in the invention stage, the instructor introduces the concept or principle to be learned as a way of ordering the concrete experience of the exploration stage. This concept or principle should provide the student with a new mental structure and the beginning of formal operational thinking. However, this structure must be reinforced during the discovery stage when students apply directly what they have assimilated during the invention phase.

The Learning Cycle is especially suited to science courses, where the traditional pattern of lecture followed by lab can be reversed, and in the exploration phase students can be given opportunities in a lab setting for concrete experience with materials. In the invention phase a new concept can be introduced as a way of ordering the experience. Finally, in the discovery phase of the cycle further activities can be planned which are based on this new concept, and students can reinforce and enlarge upon what they learned

during invention.

Without chemistry experiments or fetal pigs to work with, the English teacher has a more difficult task than does the science teacher in making use of the Learning Cycle. But as I mentioned before, studies have shown that a significant number of college students do not perform consistently at the formal operational level, the importance of which for a teacher of writing is that the mental structures required to perform ~~at the~~ formal operation ~~are~~ are the same as those required for analytical writing. Indeed, the survey of student writing in British schools done by James Britton and others showed that 42% of the writing done by students in the seventh year (students equivalent in age to high school seniors and college freshmen in the United States) was analogic, or writing corresponding to Piaget's concrete operational thinking. Only 8% of the writing was what Britton called speculative writing, writing in which, as he says, "students consider alternative possibilities and perhaps weigh them." Tautologic writing, that which "concerns itself with theory and therefore with making propositions about propositions," made up only 6% of the writing done by seventh year students.

If Basic Writing teachers see as one of the most serious problems of their students an inability to do the kind of abstract thinking necessary for analytical writing (what Britton calls speculative and tautologic writing), they can make use of the Learning Cycle and design exploration and invention activities which will lead their students to practice with analytical writing.

Probably the first principle Basic Writing students need to master is that ideas to write about come from their own experience and observation. Mina Shaughnessey points out that Basic Writing teachers often tell students that a paragraph is a group of sentences developing a main idea or that a topic sentence is the statement of the main idea of a paragraph, but students often do not know how to recognize an idea or how to get one. A good place to begin a Basic Writing course, then, is with activities designed to enable students to see how people get ideas or abstractions.

For the first exploration activity in my course, I use Shaughnessey's suggestion that initial writing assignments be based on non-print data so that the shift from observation to generalization be sharply drawn. I have students view a series of slides showing children at play, athletes engaged in strong physical exercise, and war--all taken from a collection of Life magazine's best photographs. Immediately after viewing each slide group, students do freewriting exercises, looking each time for what Peter Elbow (Writing Without Teachers) calls the "center of gravity," the sentence which seems most significant in the writing. Students list their sentences on the board and the class discusses them. It is important, as Moffett points out, for students to discover that there are many ways of abstracting and that the individual student's way can be private and parochial. Finally students write a paragraph using generalizations from their own freewriting or from the list on the board for a central idea and specific observations suggested by the slides to develop these ideas.

In the next writing assignments of paragraph length I use printed data of increasing complexity, data from which generalizations become more

difficult to draw. These data I xerox from the most recent edition of The World Almanac. I begin with tables of statistics compiled by A.C. Neilson describing top rated television shows and viewing habits of the American public. I divide the class into small groups, each one studying and discussing the data and drawing generalizations from them. I then have each group list its generalizations on the board for the entire class to discuss. The students then write a paragraph using any of the generalizations on the board for a topic idea and data on the xeroxed sheets for support. Following the same procedure, I next use data from the U.S. Bureau of Census on population growth and from the F.B.I. on crime and arrest trends. While working on these paragraphs, the students are thinking on the concrete operational level, classifying and drawing generalizations from concrete data. Although the paragraphs they write have some sentence structure and grammatical problems, they are more specific, unified, and coherent than ones written this early in the semester by students using a paragraph writing text which provides a list of topic sentences or topic ideas for paragraph assignments.

I next set up a learning cycle in which formal operational thinking is possible. Moffett's statement that "increased consciousness of abstracting has as much to do with developmental growth as progression up the abstraction ladder" and his list of forms of discourse defined in terms of that progression provide the basis for this cycle. During the exploration phase the students read^u a short poem such as "When in Rome" by Mari Evans and, without any discussion, write a paragraph describing the dramatic situation in the poem. As the students read their paragraphs to the class, I list on the board the wide variety of characters their interpretations produce. After a thorough discussion of the data in the poem, the students finally arrive at a statement of the theme of the poem, a generalization that becomes the thesis for a

short essay in which they use the data in the poem for support. Most of their generalizations concern the patronizing, insensitive attitude of the authority figure in the poem. The discovery phase moves the students into formal operational thinking, what Piaget describes as making propositions about propositions and Moffett labels as theorizing. The students write a second essay with the same generalization they used in the paper with supporting details from the poem, but this time the details come from their own experience or observation. Although the thesis for this paper derives from their study of the poem, the students now, for the first time in the course, provide their own data with examples similar to the situation in the poem. I then repeat this same procedure with another poem or short story.

The students then work with a Learning Cycle with which I hope to increase their awareness of audience. During the exploration phase they do some exercises I adapted from Conceptual Blockbusting by James L. Adams to dramatize the situation of communicating with various audiences. Using kitchen items such as a shrimp deveiner or a saw-all (a strange object I once got at a Tupperware party but never figured out how to use), I first have one student who cannot see the item draw it on the board from the description provided by the class, all students using hand gestures and answering questions from the student at the board. For the next approach another student goes to the board, but this time only one student, who cannot use gestures, describes another object and answers questions. Up to this point, the students are communicating with a known audience who can supply immediate feedback. During the next round one student draws an object from one another student's description, but now the drawer cannot ask questions. In this situation the speaker has to determine what is confusing the drawer. The final trial resembles the situation of the writer who communicates with an

unknown audience. One student goes to the board while the rest of the class turn around so they cannot see the board. All of the students participate in the description, but they cannot see the drawing nor can they answer questions from the drawer. During the invention phase of this cycle I list on the board all of the factors the students suggest are important in getting an accurate picture, items which include vocabulary, analogy, and beginning with a broad general description of the object. We also discuss problems that arise as the audience becomes more distant. The principle I want them to discover is that, as Moffett suggests, they "abstract for as well as from" and that composition means handling two dimensions at once; a speaker must stand in some relation to both his subject and his audience.

For the discovery phase of this cycle I divide the class into two groups and give each group a different poem to analyze. Their audience is the other group. While each group is working on outlines and rough drafts, at one point I ask them to stop, read, and briefly discuss the poem being analyzed by the other group. Listening to these discussions helps to remind each group of the difficulties they initially encountered with the poem and ones they will have to explain clearly for their audience. When the final drafts are ready, each group selects the one or two best papers which are then read to the class.

I should mention that peer evaluation of writing assignments is important in this course. For all writing assignments students bring outlines and rough drafts to class and exchange papers in small groups, getting suggestions from their peers for revision. Also, I follow each writing assignment with mimeographed samples so that the class can discuss strengths and weaknesses of the papers.

Although I do not spend class time on grammar drills, I do not ignore mechanical errors. After the first weeks of the semester I mark all errors on students' papers and require correction of these errors as part of the work for the course. In class we discuss errors as they arise in the sample papers. I use as a text Blumenthal's English 3200, a programmed text which allows the students to work at their own pace through a review of grammar and which is accompanied by a booklet of tests I can use to check the students' progress.

Although I have done no formal study of my students' performance in the required two semester composition course, our department is fairly small and my position as Director of the Writing Lab puts me in contact with many students, so I can do informal follow-ups. From these checks I have found that my former basic writing students are able to do average and above-average work in Freshman English, quite an accomplishment in a department where only roughly 5% of students in composition receive A's. By concentrating on the writing process and designing activities to help the students with abstract thinking, I feel I am doing a better job of preparing them for the writing that will be required of them in all of their college courses than I did when I began teaching basic writing at the College and followed the prescribed march through grammar drills in the Harbrace College Workbook.

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